ASSESSMENT OF HEALTH EFFECTS OF TRANSPORT POLICIES IN ROME: IMPACT ON SOCIO-ECONOMIC INEQUALITIES

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Objectives and aims: To reduce traffic-related air pollution local councils usually introduce transportation policies, including congestion charges, environmental zoning, monetary subsidies to decrease the number of older cars on the road, and measures to promote public transport and cycling. Few studies have assessed the effects of these traffic policies. Our aim was to evaluate the impact, in terms of air quality and health effects, of the two low emission zones (Limited Traffic Zone and Railway Ring) implemented in Rome in the period 2001-2005, and to examine whether the impact was different according to socioeconomic position (SEP).
Methods: We evaluated the effects of the policy intervention on various stages in the full chain model, that is: pressures (number and age distribution of cars), emissions, PM10 and NO2 concentrations, population exposure, and years of life gained (YLG). The impact was evaluated according to a small-area indicator of SEP of the residents.
Results: In the period 2001-2005 there was a decrease in the total number of cars (-3.8%), of NO2 and PM10 emissions, of traffic-related concentrations (from 22.9 to 17.4 ug/m3 for NO2 and from 7.8 to 6.2 ug/m3 for PM10), and in the overall population exposure. The specific policy had an impact on concentrations in the two low emission zones (NO2: -4.13 and -2.99 ug/m3; PM10: -0.70 and -0.47 ug/m3). Overall, residents living along busy roads (264,522 subjects) gained 3.4 days per person (921 YLG per 100,000) for NO2 reduction; the gain was larger for people in the highest SEP group (1387 YLG per 100,000) than for residents in the lowest SEP group (340 YLG per 100,000).
Conclusions: The traffic policy in Rome was effective in reducing traffic-related air pollution, but because of the spatial distribution of SEP in the city, most of the health gains were found in well-off residents.